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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
HO, CHUONG T	
ART UNIT	**PAPER NUMBER**
2664	

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/811,440	AKAHANE ET AL.	
	Examiner	Art Unit	
	Chuong Ho	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-6 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-6 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 4, 2, 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al. (U.S.Patent No. 6,633,571 B1, filed Sep. 09, 1999) in view of Luciani et al. (U.S.Patent No. 6,614,791 B1, filed May 11, 1999).

In the claim 1, see figure 1, Sakamoto et al. discloses a router (interwork router 10) connected to a core network, a first local area network (LAN) (LAN 1) belonging to a first virtual private network (VPN), a second LAN (LAN 2) belonging to a second VPN, third LAN (LAN a) belonging to a third VPN and a fourth LAN (LAN b) belonging to a fourth VPN, comprising:

See figure 1, 3, a first interface for accommodating a first line connected to the first LAN (LAN 1) and the second LAN (LAN 2) , the IP packets from the first and the second LANS being encapsulated by a first protocol (ATM) (see col. 5, lines 10-20, lines 65-67, col. 6, lines 1-3, lines 13-17, lines 59-62, lines 66-67, col. 8, lines 55-65);

See figure 1, a second interface for accommodating a second line connected to the third LAN and a third line connected to the fourth LAN, and for receiving IP packets from the third LAN via the second line and IP packets from the fourth LAN via the third line, the

IP packets from the third and the fourth LAN being encapsulated by a second protocol (IP capsule) different the first protocol (see col. 5, lines 10-20, lines 65-67, col. 6, lines 1-3, lines 13-17, lines 59-62, lines 66-67, col. 8, lines 55-65);

For identifying which of the third VPN and forth VPN to which an IP packet received at a the second interface belonging by physical interface numbers assigned to interface between the second interface and the second line and interface and interface between the second interface and the third line (see figure 1, col. 5, lines 10-20, lines 65-67, col. 6, lines 1-3, lines 13-17, lines 59-62, lines 66-67, col. 8, lines 55-65).

However, Sakamoto et al. is silent to disclosing receiving multiplexing IP packets from the first and the second LAN via the first line, the IP packets from the first and the second LANs being encapsulated by a first protocol.

Luciani et al. discloses Packets from multiple VPNs are multiplexed over the connection. Each packet is associated with a particular VPN (see abstract); comprising: receiving multiplexing IP packets from the first and the second LAN via the first line, the IP packets from the first and the second LANs being encapsulated by a first protocol (see abstract, see col. 2, lines 25-30, lines 45-50, lines 55-60, col. 1, lines 23-30, col. 3, lines 1-5, col. 9, lines 1-10, lines 36-37, lines 45-50, col. 10, lines 5-25, col. 12, lines 15-27).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Sakamoto with the teaching of Luciani to multiplex IP packets from the first and the second LAN via the first line, the IP packets from the first and the second LANs being encapsulated by a first protocol in order to support a

number different protocols that enable the communication devices (router) to communicate over a data communication network.

4. In the claim 4, see figure 1, Sakamoto et al. discloses a router (interwork router 10) connected to a core network, a first local area network (LAN) (LAN 1) belonging to a first virtual private network (VPN), a second LAN (LAN 2) belonging to a second VPN, third LAN (LAN a) belonging to a third VPN and a fourth LAN (LAN b) belonging to a fourth VPN, comprising:

See figure 1, 3, a first interface for accommodating a first line connected to the first LAN (LAN 1) and the second LAN (LAN 2) , the IP packets from the first and the second LANS being encapsulated by a first protocol (ATM) (see col. 5, lines 10-20, lines 65-67, col. 6, lines 1-3, lines 13-17, lines 59-62, lines 66-67, col. 8, lines 55-65);

See figure 1, a second interface for accommodating a second line connected to the third LAN and a third line connected to the fourth LAN, and for receiving IP packets from the third LAN via the second line and IP packets from the fourth LAN via the third line, the IP packets from the third and the fourth LAN being encapsulated by a second protocol (IP capsule) different the first protocol (see col. 5, lines 10-20, lines 65-67, col. 6, lines 1-3, lines 13-17, lines 59-62, lines 66-67, col. 8, lines 55-65);

For identifying which of the third VPN and forth VPN to which an IP packet received at a the second interface belonging by physical interface numbers assigned to interface between the second interface and the second line and interface and interface between the second interface and the third line (see figure 1, col. 5, lines 10-20, lines 65-67, col. 6, lines 1-3, lines 13-17, lines 59-62, lines 66-67, col. 8, lines 55-65);

receiving header information of the first protocol (ATM) as a VPN identifier for identifying which of the first VPN and the second VPN to which an IP packet received from the first line belongs to the memory (see figure 1, col. 5, lines 10-20, lines 65-67, col. 6, lines 1-3, lines 13-17, lines 59-62, lines 66-67, col. 8, lines 55-65);

registering physical interface numbers assigned to interface between the router and the second line as a VPN identifier for identifying which of the third VPN and the forth VPN to which an IP packet received either the second line or the third line belongs (see figure 1, col. 5, lines 10-20, lines 65-67, col. 6, lines 1-3, lines 13-17, lines 59-62, lines 66-67, col. 8, lines 55-65).

However, Sakamoto et al. is silent to disclosing receiving multiplexing IP packets from the first and the second LAN via the first line, the IP packets from the first and the second LANs being encapsulated by a first protocol.

Luciani et al. discloses Packets from multiple VPNs are multiplexed over the connection. Each packet is associated with a particular VPN (see abstract); comprising:

receiving multiplexing IP packets from the first and the second LAN via the first line, the IP packets from the first and the second LANs being encapsulated by a first protocol (see abstract, see col. 2, lines 25-30, lines 45-50, lines 55-60, col. 1, lines 23-30, col. 3, lines 1-5, col. 9, lines 1-10, lines 36-37, lines 45-50, col. 10, lines 5-25, col. 12, lines 15-27);

receiving header information of the first protocol (ATM) as a VPN identifier for identifying which of the first VPN and the second VPN to which an IP packet received from the first line belongs to the memory (see col. 9, lines 37-39, col. 3, lines 1-5, col. 6, lines 53-55);

registering physical interface numbers assigned to interface between the router and the second line as a VPN identifier for identifying which of the third VPN and the forth VPN to which an IP packet received either the second line or the third line belongs (see col. 9, lines 37-39, col. 3, lines 1-5, col. 6, lines 53-55)

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Sakamoto with the teaching of Luciani to multiplex IP packets from the first and the second LAN via the first line, the IP packets from the first and the second LANs being encapsulated by a first protocol in order to support a number different protocols that enable the communication devices (router) to communicate over a data communication network.

5. In the claims 2, 5, Luciani et al. discloses a first routing table for the first VPN, the first routing table (egress cahes) mapping each IP addresses used in the first VPN to each of capsule headers used in the core network (see col. 9, lines 20-30); a second routing table for the second VPN, the second routing table mapping each IP addresses used in the second VPN to each of capsule headers used in the core network (see col. 9, lines 20-30); a third routing table for the third VPN, the third routing table mapping each IP addresses used in the third VPN to each of capsule headers used in the core network (see col. 9, lines 20-30); a fourth routing table for the fourth VPN, the fourth routing table mapping each IP addresses used in the fourth VPN to each of capsule headers used in the core network (see col. 9, lines 20-50); a processing unit for adding an capsule header used in the core network to an IP packet belonging to the first VPN by referring the first routing table, adding an capsule header used in the core network to

an IP packet belonging to the second VPN by referring the second routing table adding an capsule header used in the core network to an IP packet belonging to the third VPN by referring the third routing table and adding an capsule header used in the core network to an IP packet belonging to the forth VPN by referring the forth routing table (see col. 10, lines 23-27).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 3, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Sakamoto-.Liciani) in view of Hurren et al. (U.S.Patent No. 6,788,681 B1).

In the claim 3, 6, the combined system (Sakamoto-Liciani) discloses the limitations of claim 1 above.

However, the combined system (Sakamoto-Liciani) is silent to disclosing PPP over SONET.

Hurrent et al. Disclosesthe a system associated each VPN with a unique identifier and each LAN of the VPN with a interface device connected the LAN to the connectionless network, which may be for example, a Synchronous Optical Network (SONET). The interface device may service a plurality of LANs. Accordingly, each LAN

is associated with a User-Network Interface that forms part the interface device (see abstract); comprising:

PPP over SONET (see abstract, see col. 4, lines 28-45, col. 5, lines 58-67).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Sakamoto-Liciani) with Hurrent to provide PPP over SONET in order to support many Virtual Private Networks. Therefore, the combined system have been enable Network Service Providers (NSPs) to provide virtual local area network (VLANs) services to groups of customers.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong ho whose telephone number is (571)272-3133. The examiner can normally be reached on Monday-Friday from 8:00AM-4:00PM.

9. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chuong Ho
Examiner
Art Unit 2664

09/19/04